

Is Aussat-B on the wrong course?

Michael Botein argues that Government plans for pay TV are out of step with international practice, but the problems can be rectified

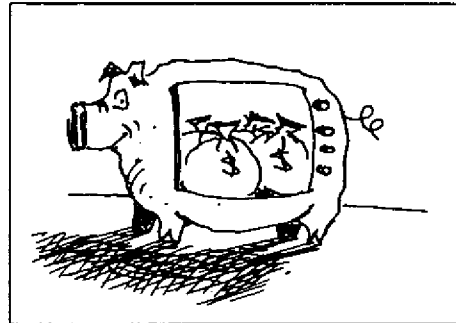
With all of the current debate about the future of "pay television" in Australia, little attention seems to have been given to some existing high-quality literature on the topic. 1989 obviously was a vintage year for electronic media research in Australia. It produced not only the Department of Transport and Communication's *Future Directions for Pay Television in Australia*, but also the Parliamentary study *To Pay or Not to Pay* ("the Saunderson Report").

Unfortunately, however, little of that accumulated wisdom seems to have gone into the AUSSAT-B implementation phase. The Saunderson Report basically proposed a combination of the cable television and multichannel MDS ("MMDS") to offer the vast majority of the population a large number of channels, fed by comparatively low-power satellites. This would have had the advantage of providing far more services than the current 4 to 6 channel AUSSAT-B proposal, along with "narrowcasting" and local programming.

Subject to a few caveats, this still seems to be the best approach in terms of economic viability, diversity of programming, and subscriber charges. Experience with various forms of pay television in both the US and EC reinforces this conclusion. At first glance it would appear impossible to return to these goals. AUSSAT-B is configured for a relatively small number of high-power (50 watt) transponders thus perhaps making it impossible to transmit the large number of channels (that is, 40 or more) necessary for terrestrial distribution by cable and MDS systems. Nevertheless, it may be possible to change AUSSAT-B's mission sufficiently for it to transmit substantially more channels.

What is pay TV?

To begin with, there appears to be considerable confusion as to the definition of "pay television". Some commentators use it to denote any mechanism of charging for electronically transmitted programming whether 1 or 100 channels; other observers see it as encompassing multichannel media, such as cable or MMDS. Regardless of definitional ground



rules, however, it is important to recognise that these two types of enterprises have radically different technological, economic, and social parameters.

Single-channel or low-capacity pay systems attempt to attract customers by offering high-quality programming not otherwise available in the home. Unless the programming is very attractive to a large number of potential consumers, this type of pay operation has only limited appeal and economic viability. (This form of pay operation may function with either a per-channel or a per-program charge, so-called "pay-per-view").

Pay TV In Focus

A multichannel system uses a combination of both quality and diversity to attract customers. Two US proprietary studies have shown that the average cable subscriber watches a total of 9 channels. In order to attract a new customer, a cable system thus has a powerful economic incentive to offer as many channels as possible; this obviously increases the chance that a potential subscriber will find attractive material. And in the process, of course, it increases the diversity of programming by several orders of magnitude. Multichannel media usually offer not only a "basic service" with 40 or more channels, but also half-a-dozen pay channels. In this context, pay television becomes a subset of multichannel video.

Pay TV in United States

A brief review of the US and EC history thus may be helpful. The Federal Communications Commission ("FCC") authorised single-channel

subscription television ("STV") stations initially in 1968. Almost universally in the UHF band and thus at a disadvantage in terms of reception, these stand-alone operations offered a mix of recently released movies, at a monthly charge of about \$20 (in Australian dollars, which are used throughout this article). At STV's peak, there were about 30 stations on the air; by the end of the 1980's, there were none.

Single-channel MDS has had much the same experience. Although a few systems still are on the air, particularly in areas without cable, the number of stations and subscribers consistently has shrunk.

The reason for STV's and single-channel MDS's problems seems to have been that consumers simply are not willing to pay a relatively high fee for a highly limited choice of programs. STV's and MDS's weaknesses were exacerbated by the increasing penetration of cable, which then offered 30 or more channels including pay channels, at the end of the 1970's. STV and single-channel MDS thus apparently played the role of a transitional technology, between traditional mass-appeal broadcasting and cable's emerging multichannel capability.

Moreover, cable's successful development appears to have been based upon its providing multiple channels, not pay programming. Although pay programming was highly successful after its introduction in the late 1970's constituting about 40 percent of cable's revenue it has been decreasingly popular with subscribers. Today only 29 percent of cable homes take a pay service, down from 33 percent just a year ago. The engine behind cable's growth seems to be its multichannel basic service package, not pay programming; cable drives pay, not vice versa.

MMDS

Multichannel MDS has not had the same success; only a handful of systems are on the air, and all of them are in severe financial straits. MMDS's problems seem to stem from barriers to entry, however, rather than from poor economic viability. Virtually all US cable programmers are owned by or affiliated with cable multiple systems operators ("MSOs"), which naturally have no interest in facing another multichannel competitor. For mysterious and unarticulated reasons, the programmers refused to sell to MMDS operators. And

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with no programming to offer, MMDS systems obviously had nothing to offer potential subscribers. Moreover, the FCC seemed to take an unusually long time to process routine, uncontested applications for MMDS frequencies.

Unlike STV's failure, MMDS's probable demise does not seem to be market driven. MMDS can offer a large number of channels at a cost often below that of cable. Thirty-one channels currently are available to MMDS operators in major US television markets, and more could be made available. Moreover, a typical MMDS installation includes a high-performance conventional television antenna, which improves reception of traditional broadcast stations.

Moreover, MMDS is quite inexpensive to build and operate. An installation with receivers, central processing unit, antenna, and transmitters costs about \$650,000. An antenna and receiver/decoder costs about \$325 with installation. Some observers claim that an MMDS operation can break even with as few as 5,000 subscribers. For this reason, it may make sense to combine a cable and MMDS operation; cable is more efficient in densely populated areas with poor line-of-sight reception, while MMDS is somewhat density-insensitive in relatively flat terrain.

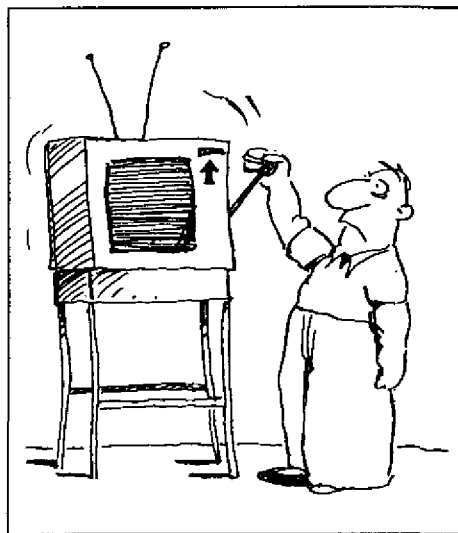
Indeed, one of the mysteries of the Australian video experience is the assumption that only 3 to 10 MDS channels are available in any given locality. The basis for this conclusion is less than clear. It seems difficult to believe that so few channels are available in areas with populations of 3 or 4 million, when 31 exist in areas like the New York tri-state metropolitan area with 20 million people, 17 broadcast television stations, 62 radio stations, a host of land-mobile uses, and a high cellular radio penetration. In fact, Australia has 19 allocated MDS channels, 6 of which are reserved for pay programming. The other 13 have a variety of non-broadcast uses, and more channels apparently could be allocated to MDS.

European experience

The EC experience has been somewhat different from that of the US, albeit with apparent internally inconsistent results. As Europe's first STV operation, Canal Plus has been outstandingly successful; it has several million subscribers in France alone, and continually is expanding both there and in other countries including perhaps Australia. Its success seems completely inconsistent with the STV experience in the US.

At the same time, cable has been a total

disaster in most of Europe. Most United Kingdom systems are a year or more behind their construction schedules, and have been threatened with severe penalties by the Office of Telecommunications ("OfTel"). Perhaps most important, penetration levels are extremely low with a high of 21 percent and lows below 10 percent. Since US cable systems generally need penetration levels of at least 50 percent to be even moderately profitable, the present UK industry obviously does not seem to have a very bright future.



On the other hand, cable has been resoundingly successful in the Low Countries, with penetration levels as high as 90 percent. There seems to be no facile explanation for the difference between the markedly different results in the UK and the Low Countries. Lack of broadcast television service does not explain the difference, since nations like Belgium and Holland receive not only their own indigenous stations, but also signals from other countries. Some observers have suggested that UK consumers resist subscription payments, because they already pay an annual television set license fee. However, the amount is low enough that it hardly seems to account for the massive difference in penetration rates.

Pay TV in focus

The significance of the EC experience thus is confusing. Canal Plus's resounding success suggests that 1 or 2 channel pay systems may be viable, and UK cable's underwhelming results indicate that multichannel cable is not economic. The experience in other countries makes these conclusions questionable.

Costs of delivery

Moreover, this discussion has not considered the relative costs and prices of the various delivery systems, obviously a matter of concern to both consumers and the government. A cost comparison between cable, MMDS, and the current AUSSAT-B proposal in terms of capital cost per channel per subscriber is as follows:

cable	\$22
MMDS	\$19
AUSSAT-B	\$205

The cable and MMDS figures are based upon studies of the US cable market; the AUSSAT-B makes the probably quite optimistic assumption that AUSSAT-B will achieve 50 percent penetration, at the announced annual cost of \$66.8 million per transponder.

The AUSSAT-B figure is composed of two items: a lease price of \$2 per year over twenty years (\$40) and a satellite receiver cost of \$1,000 for 6 channels (\$165). (The analysis uses a twenty-year term, even though AUSSAT-B may not last that long, since this is a common lifetime for cable or MMDS systems).

AUSSAT-B service also is considerably more expensive in terms of subscriber fees. Using the unofficially discussed AUSSAT-B price of \$45 for the initial 4 channels, the monthly fee per channel per subscriber would be as follows:

cable (basic)	\$0.45
MMDS	\$0.50
AUSSAT-B	\$11.25

This naturally does not include optional pay channels on cable or MMDS. Assuming one pay channel per subscriber far above the US norm, as noted above the comparison would be as follows:

cable (basic)	\$0.80
MMDS	\$1.00
AUSSAT-B	\$11.25

The imperative question for Australia, of course, is whether consumers will prefer a low-capacity pay operation or a high-capacity multichannel system. To be sure, the UK cable problems cast some doubt upon the US success with multichannel cable. But the weight of the experience seems to favour a multichannel medium. First, the US has by far the longest history with new video media which has witnessed STV's failure and cable's success. Second, the relatively short EC experience that is, 10 versus 40 years contains some internal inconsistencies. And in terms of the relative costs and prices, a multichannel system seems preferable from a consumer's point of view.

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Can Aussat-B become multi-channel?

If a multichannel system is the medium of choice, a 4 to 6 pay channel space service on AUSSAT-B does not seem to have a very rosy future. At best, it never may get off the ground; at worst, it may turn out to a transitional technology like STV. This latter result would discourage the development of multichannel media, especially if the moratorium on other new video media continues.

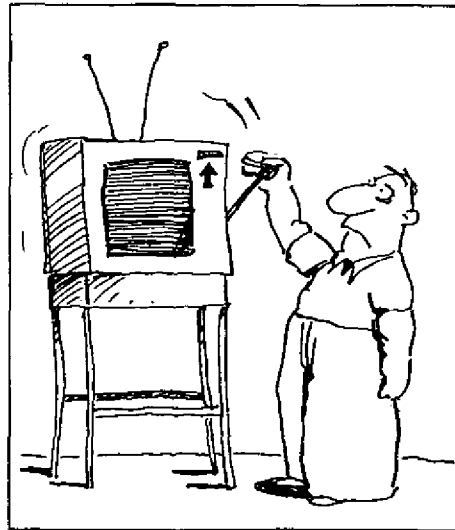
One answer may be that with one bird ready to be launched and another completed, Australia simply is stuck with a low-capacity service. But there may be ways to work within AUSSAT-B's technical parameters, in order to implement a high-capacity multichannel system.

The most attractive solution, of course, is digital compression. A compression ratio of 6:1 on the full six potential transponders would yield 36 channels roughly equivalent to a cable or MMDS system. But it naturally would not allow insertion of any local programming, and would require retrofitting all existing receivers.

Moreover, the future of digital compression is less than certain. Of the 3 US firms proposing to use it in various DBS schemes a year ago, only 1 is still in existence, and it has been unable to raise substantial venture capital. Although digital compression probably will work at some point in the future, it is impossible to predict when and at what cost.

Even if digital compression does not turn out to be AUSSAT-B's white knight, there may be other ways of achieving an affordable terrestrial multichannel system. Without altering the AUSSAT-B satellites, 3 fairly simple steps would increase greatly the number of signals they can transmit.

First, more transponders eg 10 on each bird could be allocated to video uses, for a total of 20 transponders. This might not interfere with AUSSAT-B's other responsibilities in the telecommunications sphere. Right now, there is a tremendous over-capacity in telecommunications transmission, both domestically and internationally. AUSSAT-A still is nowhere near full capacity, and AUSSAT-B will have far greater capacity. Moreover, AOTC has completed high-capacity fibre optic links between all major cities, and shows no sign of slowing down its



construction. Whatever the magic number may be, it thus seems feasible to increase the number of AUSSAT-B video transponders.

Second, all 20 (hypothetical) transponders could be deployed as national beams. Aside from increasing the total number of channels for terrestrial redistribution, this would permit more channels to be used for local origination or access programming.

Finally, each transponder could be split. This would yield 2 12-watt signals per transponder, or a total of 40 national beams. This would be more than enough for a modern multichannel system, since the cable or MMDS operation also would carry any relatively close broadcast signals and locally produced programming.

Pay TV in focus

This approach would result in a modern multichannel system, at a much lower cost per channel than under AUSSAT-B's current plan. By comparison to AUSSAT-B, it would have 1000 percent more channels, at a fraction of the cost per channel and half of the apparently planned monthly subscription fee.

Political Problems

Two political problems obviously exist with this type of solution: (1) Australian content in programming; and (2) service to the outback. Both seem to be resolvable.

The Australian content issue is quite different in the context of a multichannel rather than a single-channel broadcasting medium. "Narrowcasting" makes extremely specialised programming possible. For example, an all-Australian classic movie and video channel might be economically

feasible, along the lines of similar US old movie offerings. Moreover, local origination and access programming would add a substantial amount of Australian, as well as local content. Although the product is only one step above home videos, its highly local nature seems to attract a small but loyal following in the US.

The second problem can be addressed by a relatively small infusion of money. Sam Paltridge of CIRCIT estimates that less than 50,000 people would be totally without any form of terrestrial service. Even if the government gave each household an earth station, the total one-time cost would be about \$17,000,000, that is, the price of leasing 2.5 transponders under the current scheme for one year. Concerns about cluttering up subscribers' back yards with 1.5 meter dish seem questionable. If a consumer lives in a truly remote area, he or she should be able to find an appropriate way to disguise a four-foot piece of metal a hundred metres away.

Conclusion

AUSSAT-B is a fine piece of technology, but is hopelessly out of step with modern notions as to multichannel distribution systems. With relatively minor changes, however, AUSSAT-B's mission can be brought into line with more economically viable and socially useful goals. If reconfigured under some scheme similar to that suggested above, AUSSAT-B could achieve sound economic viability, increase programming diversity as well as localism, and offer lower costs to consumers.

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Since the writing of this article the Government has announced that the successful pay TV bidder will be able to use digital compression to increase the number of program channels it broadcasts. See Communications News for details.

The Editor